OCTOBER 1948

FIREMEN

FIFTY-THIRD YEAR • NATIONAL FIRE PROTECTION ASSOCIATION

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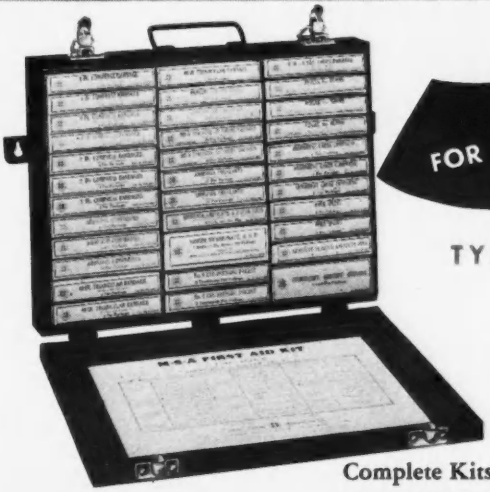

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Firemen

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WARREN Y. KIMBALL — EDITOR
OWEN L. DELLA LUCCA — ASSOCIATE EDITOR
CHARLES S. MORGAN — ADVERTISING MANAGER

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PERCY BUGBEE — GENERAL MANAGER
ROBERT S. MOULTON — TECHNICAL SECRETARY
HORATIO BOND — CHIEF ENGINEER

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THE cover picture this month (Burlington Free Press photo) shows the burning of modern new dairy barn on the Ethan Allen Farms at South Burlington, Vt. About 200 tons of hay was destroyed in the $75,000 fire fought by three fire departments. Only the silos were saved.

Despite progress being made in improved rural fire protection, the farm fire loss problem continues to present a major problem in almost every state and province. Farm values are high and often are concentrated in a single fire area. In general, alarm service depends upon rural telephone service. Even if a fire is discovered and reported promptly, often runs are long and frequently water supplies are limited so that volunteer firemen have a real fight on their hands when they reach the scene.

However, excellent work is being done both in preventing and fighting rural fires. Many farm fires that would have resulted in total losses a few years ago are being controlled by rural pumpers and water tank apparatus equipped with 1½-in. hose, high and low pressure fog nozzles, water wetting agents, suction boosters, portable pumps, and other tools of the rural fire fighters' trade.

CHIEF JAMES W. JUST, Director, Fire Service Extension, University of Maryland, ventures an opinion that the editors of FIREMEN "got a bit off the reservation" by running a picture of a water tower improvised from a ladder on the cover of the August issue. Chief Just reports that he has seen the line get out of control on two occasions when this evolution was attempted, and that the number of men required for safe operation of the improvised water tower make it impractical on the fire ground even though the evolution is taught by a number of drill schools.

This comment brings to mind the thought that it is quite common for many drills schools to show various methods of improvising with standard equipment to achieve results normally attained by specialized equipment. This may have some advantage where small departments having one or two pumpers encounter fires that in larger cities would be fought by numerous companies using specialized equipment.

However, in almost no case can it be said that an improvized water tower, cellar pipe, or heavy stream device, can be considered as safe, convenient or efficient as a tool or appliance designed for the specific job. Certainly, a water tower improvised by tieing hose and nozzle to a ladder does not replace a water tower or aerial ladder pipe. Neither does a hose line lashed to a ladder replace a properly designed cellar pipe or distributor nozzle although frequently used as such.

The purpose of many of these improvisations taught at fire schools is to teach fire fighters resourcefulness under emergency conditions. It is better to make use of expedients than to lose control of a fire through lack of ability to direct a stream through an upper window or into a basement opening as the case may be. It is better still to so sell the needs of the fire department to a community so that the fire department budget will be ample to provide for needed items of apparatus and equipment. Thus fire fighters will not be required to risk injury or delay with improvisations.

In brief, the limitations of every piece of fire equipment must be kept in mind. Fire fighters must be prepared to use every machine or appliance to its full safe working capacity. They must be able to improvise where this spells the difference between success or failure.

WETTING agents or "water softeners" used to make small streams of water more effective for fighting fires have been on the market for more than 30 months (see FIREMEN, March 1946). Many fire departments have found that the addition of a small amount of such chemicals to the booster tank reduces the surface tension of water to permit increased penetration of water on certain fuels and provides a finer breakdown of water droplets at moderate pressures. The wetting agents are proving themselves particularly effective on forest fuels, on fires in waste materials, on certain flammable liquids and fires where penetration of the fuel from the surface is important.

Strange to say that while a few dollars spent on wetting agents purchased from a reliable fire department supply concern might vastly increase the efficiency of water used for fire fighting, many fire departments have as yet had no experience with wetting agents even on an experimental basis. Certainly, the claims of manufacturers that the efficiency of booster tank streams can be doubled, warrant some actual field experiments on the part of fire fighters.

Fear of possible corrosion of booster tanks should not prove a valid excuse for failure to use wetting agents. Reliable supply concerns provide wetting agents intended for the fire service with effective corrosion inhibitors. Also proportioners are available which permit the chemical to be carried in a separate container and introduced into the hose line correctly proportioned as needed. A very simple means of utilizing wetting agents is to carry the liquid in cans of proper size to "treat" a full booster tank. When wet water is needed the pump operator merely empties the contents of a can into the fill opening of the tank, being careful to agitate the contents of the tank to obtain a thorough distribution.

Anything that promises to increase the effectiveness of water tank apparatus at moderate cost should not be neglected by rural fire fighters.

Safe Operation of Fire Trucks

1948 Texas Fire School Included Practical Course in Safe Driving of Fire Trucks

by Russell FitzPatrick, Specialist in Training of Motor Transport Operators

FOR the first time in its nineteen years of operation, the annual fireman's training school at Texas A. & M. College this year offered a three-hour session on the operation of emergency vehicles. The vehicle course was handled by Russell FitzPatrick, a member of the College staff who is in charge of the motor transport training division of the Industrial Extension Service.

The material offered was an adaptation of that presented to bus and truck line supervisors as a part of the College's regular program in that field and, judging from comments by those advanced course firemen enrolled, offered a great deal of food for thought.

Stressing at the outset that accidents involving fire department vehicles frequently result in fatalities, Mr. FitzPatrick urged that fire department drivers never forget that they are carrying passengers. These passengers, he stressed are entirely unprotected and, in the event of a smashup, are exposed to a maximum hazard.

A wreck involving a police department car and a fire department pumper which happened in Longview, Texas, shortly prior to the A. & M. school and which involved fatalities and serious injuries gave point to his warning.

The three-hour session, repeated nine times in four and a half days in order to afford better participation through division of the group into small sections, was divided into several major subheads, followed by a demonstration of an emergency stop employing one of the College fire trucks. The course outline appears on page 7.

The first part of the session was devoted to the driver's physical characteristics and the selection of the right man for the job. This covered general physical condition and a special stress on nervous, temperamental and visual qualifications. Each of these factors was explained in detail and the importance of each covered thoroughly.

Next, the condition of the vehicle was treated. Particular stress was laid on braking efficiency in this discussion. Of particular interest to the instructor, he reported, was the fact that a number of class members related actual experiences with faulty brakes. Load distribution and the effects of a shifting load (liquid in a tank) were treated at length.

Following condition of the vehicle was a treatment of the theory of defensive driving as operation is affected by type of streets to be traversed. In consideration of this primary factor, Mr. FitzPatrick urged a planned, step-by-step method of anticipation of conditions ahead before the driver leaves his station in response to an alarm. The questions the driver was urged to answer were: Are any of the streets on my selected route narrow? Are they all paved alike? Are there any blind intersections (where I might meet that deaf man)? Where am I most likely to meet other emergency vehicles responding to this alarm? (Ambulances, police vehicles, salvage and utilities trucks were covered.) Considering the time of day, where am I liable to meet traffic concentrations? How well is traffic controlled by signs, stop lights or traffic officers on my route? How can the prevailing weather affect me? (Here the class discussed the effects of high wind, rain, snow, sleet, fog. They were urged to remember that drivers operate with closed windows in bad weather and that many have car radios — that they may not hear a siren.)

Driver attitudes were discussed next. Rudeness of drivers was contrasted with normal, everyday behavior. Driver psychology was explained and the potential threats to the emergency vehicle driver inherent in driver peculiarities were discussed in the light of the dual task performed by the driver of a fire truck. (He must make all possible speed but be sure to get his vehicle and passengers to the scene of the fire.) Particular stress was placed upon the temperament of the fire department driver. His need for well balanced, cool and intelligent operation was made clear.

Prior to the field work, a discussion covered the three principal "natural" laws which govern any vehicle. These listed in their order, were shown to be friction, kinetic energy (momentum) and centrifugal force. Each was explained in its relation to correct operation. It was pointed out, for instance, that all of the control a driver has over his vehicle is at the four or six points, about the size of the palm of his hand, where his tires meet the pavement. Thus, anything which tends to rob him of friction at these points, robs him of a measure of control. The power of kinetic energy was explained in the formula, "as velocity doubles, impact squares." Thus, it was shown that if a vehicle's brakes would halt it in 20 feet at 20 MPH, over 80 feet would be required when speed is double to 40 MPH.

Finally, the effect of centrifugal force on a shifting load was explained in simple detail.

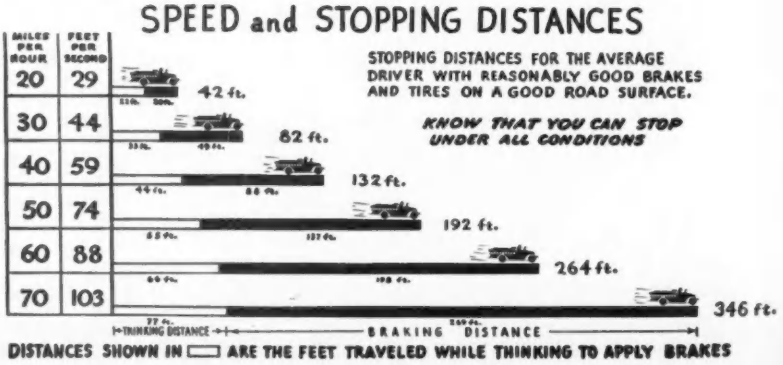
The field work consisted of a demonstration of reaction time and braking distance factors in making emergency stops. Class members drove the truck while Mr. FitzPatrick used an American Automobile Association detonator to measure their reaction and braking distances.

The 250 gallon truck which was used carried only 200 gallons of water, giving a decisive shift to the load and the 20 MPH stops ranged from 52 to as high as 70 feet — depending on the driver's reaction time.

Mr. FitzPatrick worked from lecture notes which were distributed to the class. He explained that there is no available textbook on emergency operation and that this year's school was in the nature of a pioneering venture. Adding that he intends to make a further study of the peculiarities of the prob-

Memorize This Information

SPEED and STOPPING DISTANCES



lems facing fire apparatus drivers, he announced plans for the production of a booklet covering this phase of vehicle operation. It is anticipated that the work will be completed in the next six months.

Safe Operation of Emergency Vehicles

Principal Factors Involved in Efficient, Safe Operation:

A. Physical condition of driver
1. Nerves
2. General physical well being
3. Visual skills:
   a. Acuity
   b. Field of vision
   c. Glare recovery and resistance
   d. Depth perception
4. Reflexes (reaction time)

B. Condition of vehicle
1. Brakes
2. Getaway (rate of acceleration)
3. Load distribution
4. Lights
   (These are deemed key points with regard to fire department vehicles)

C. Traffic conditions prevailing
1. Type of streets on selected route
   a. Narrow?
   b. Type of paving?
   c. Many blind intersections?
2. At what points are other emergency vehicles responding to same call most likely to be encountered?
3. Number and behavior of private vehicle drivers
   a. Do they respond properly to siren warning?
   (In some communities they respond very poorly)
   b. Is traffic liable to be congested on selected route? (Time of day a factor)
   c. How well is traffic controlled by lights and other devices on selected route? How well does public respond to such controls in YOUR city?
4. Weather factors
   a. If cold, drivers with windows closed hear badly
   b. Water, sleet, snow, gravel, etc. Do people in your community operate well under adverse conditions?

D. Driver's attitudes
1. Driver rudeness and pedestrain courtesy contrasted
2. What happens to the average person as soon as he starts to drive vehicle? (Driver psychology explained)
3. Attitude of driver of emergency vehicle
   a. Toward others
   b. Toward passengers
   c. Toward self (on parade when responding to alarm)

E. Effect of Four Natural Laws on particular operation in which operator of vehicle is engaged
1. Friction — law of control
2. Momentum — how it grows with speed
3. Centrifugal force
4. Gravity (covers load shift as well as up, down hills)

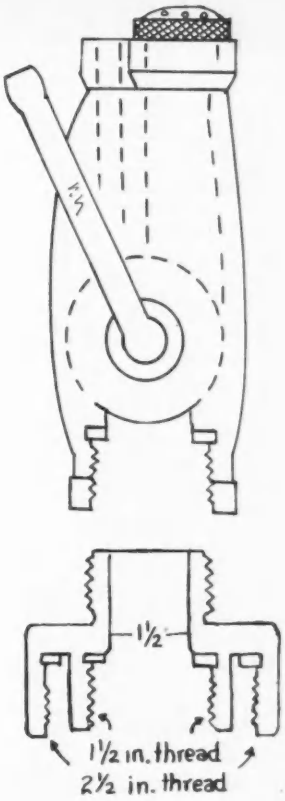
F. Driver's skill and knowledge of defensive driving theory
1. Emergency stops
   a. Reaction time and stopping distances explained
   b. Precision steering
   c. Anticipation of danger threats
2. Principal threats to defensive driver
   a. Traffic density
   b. Speed too great for conditions
   c. "Right of way" opinion of many drivers
   d. Meeting "confused" drivers
   e. The man in the car ahead may be deaf
   f. Blind intersections
   g. Condition of street (paving, railroad tracks, etc.)
   h. Meeting other emergency vehicles

Theory of Defensive Driving summarized: "The driver of every other vehicle I meet is either drunk or insane — *I'll never* expect him to do the right thing but will be prepared to defend myself against any goofy thing he might do."

●

Tricks of the Trade

Dual Adapter, 1½ in. and 2½ in. Threads



IT often has been observed that a simple and perhaps inexpensive tool or appliance may be invaluable in simplifying or speeding up the fire fighting job. One such device is an adapter that permits a nozzle or fitting with 1½-in. thread to be connected to either 1½-in. or 2½-in. hose at will without removing any fitting.

One of the most useful applications of this device is to permit the use of a 1½-in. "all-purpose" fog-straight stream nozzle on either size of hose as occasion may demand. The fitting may be kept screwed into the base of a nozzle and when the combination nozzle is required it may be attached to either size of line.

Assuming a ⅝-in. straight stream tip on the 1½-in. combination nozzle, the discharge at the higher nozzle pressures commonly used with such nozzles (80 to 100 psi) will give practically as much discharge as is obtained with the old ¾-in. straight stream tip at about 50 psi (114 *vs.* 117 gpm). This discharge can be supplied through short lines of 1½-in. hose. However, with this size of hose the pressure loss will be in the range of 40 psi per 100 ft., although somewhat less if the nozzle pressure and accompanying discharge are reduced.

When the ⅝-in. orifice all-purpose nozzle is used on a 2½-in. line the higher nozzle pressure can be maintained with only 3.5 psi friction loss per 100 ft. which means that, assuming constant elevation, 100 psi nozzle pressure can be maintained on the ⅝-in. all-purpose nozzle through 1000 ft. of 2½-in. hose with only 135 psi at the pump as compared with an unobtainable 500 psi pump pressure for the same length of 1½-in. hose. Of course, it might be good practice to use 50 or 100 ft. of 1½-in. leader line for easy handling at the end of a long line of 2½-in. hose. In such case, the 1½–2½-in. connection referred to above can be used as a conventional reducer in the line.

Any experienced fire fighter will recognize that an all-purpose nozzle with 1½-in. waterway will not carry the same quantity of water as the larger all-purpose nozzles or the 1-in. to 1¼-in. tips commonly used on 2½-in. lines. Nevertheless, in cases where relatively moderate flows are wanted at high nozzle pressures the use of the 1½-in. nozzle on the 2½-in. hose has advantages.

This adapter with dual female thread would come in handy any time excessively long lines make reduced flow through a small nozzle desirable. The fitting can also be used to attach a 1½-in. thread cellar distributor nozzle to 2½-in. hose, or used to improvise a "water thief" using an ordinary 2½-in. wye connection. One side of the wye can be reduced for a 1½-in. line and the other side used to supply a 2½-in. line. This may be important where two hose lines are desperately needed but the single supply line available cannot supply enough water for two 2½-in. lines from the wye.

Winnetka Firemen Go Looking for Fires—BEFORE THEY START

CHIEF Fire Marshal Michael J. Dalton of Winnetka, Illinois, is one of the first fire department officials to utilize two-way radio facilities to extend his fire department inspection service from the business district to the entire residential area of the community. Under a plan devised by Chief Dalton and placed in operation May 17, a 750 gpm pumper equipped with a two-way radio and having a crew of firemen makes inspection tours of various residential districts on days when weather conditions are favorable.

In the first three months of this service 537 homes were inspected out of 734 contacts. Only one out of each 25 householders refused to allow the firemen to make an inspection. In 20 percent of the cases persons were not at home and will have to be contacted on subsequent visits.

Winnetka fire truck rolls out on an inspection trip.

In his report recommending adoption of this inspection service Chief Dalton stated:

"Equipped with two-way radio entire fire companies could be sent into the field for active fire prevention work, still permitting the entire fire company to be immediately available for fire duty, including initial response.

"Fire Department apparatus consists of a 750 g.p.m. pumper, a combination 750 g.p.m. pumper and ladder truck, and a 750 g.p.m. pumper in reserve. Personnel consists of 14 regular members. A two platoon system is in effect; 6 regular members on each shift, a relief member for a-day-a-month-off plan, and a chief. The Police Department is fully equipped with two-way radio, including a transmitting station in the police station manned by a desk officer at all times. The fire department pumper is equipped with two-way radio and operates in conjunction with police department facilities.

"It is proposed that the pumper, equipped with two-way radio and manned by on-shift members of the fire department be sent into the field for active fire prevention work, still permitting the entire company to be immediately available for initial fire fighting duty. One member of the fire department would be assigned to the fire station to receive fire alarms and to respond with the ladder truck.

"The Fire Department would notify the residents of a particular section that a fire company will be in the area on a given date, weather permitting, for the purpose of making fire prevention inspections and requesting full cooperation.

"Members of the fire company would work closely together, not being spread out over more than 500 ft. although inspecting individual premises. The officer of the fire company would monitor the apparatus radio.

"The Winnetka Fire Department furnishes fire protection to the adjacent Village of Kenilworth, approximately 3,000 population and an area of 0.8 of a square mile; the unincorporated adjacent section having a population of roughly 500 and an area of 0.5 of a square mile. Winnetka is roughly 3.5 square miles, having a population of about 12,500. Exclusive of the Forest Preserve, the golf course, and vacant area to the west, Winnetka has about 2.75 square miles indicating the compactness of the built-up area. The fire department is well located, with the longest run being to the Northwest, a distance of about 2 miles."

Fire alarms are received by the member remaining at the station. An extension of the fire alarm telephone facilities at the police station permit the police desk officer to receive the alarm notification simultaneously with the member at the fire station. The police desk officer signals the fire company officer of the pending alarm. The fire company officer sounds the apparatus siren to which members making inspections respond. In the meantime the fire company officer ascertains from the police desk officer the location and nature of the fire.

The program is not in effect after 5 P.M., nor during seasons when driving conditions are impaired, or during times of high winds or extremely dry weather conditions.

Upon completion of each inspection the firemen give the householder a mimeographed letter from Chief Dalton containing fire prevention instruction designed to correct simple hazards and urging that in event of fire the fire

(*Continued on page 15*)

A MESSAGE FROM YOUR FIRE DEPARTMENT

Dear Householder:-

The primary job of the Winnetka Fire Department is to render emergency fire protection service to you. ***But*** we want to do more than that — we want to cooperate with you in ***preventing*** a fire in your home. The need is obvious, and might well be the difference between the safety and welfare of your family and the tragedies that are occurring every day.

Therefore, the Fire Department has established a ***Home Fire Prevention Inspection Service,*** available to all householders without cost. Under this plan, a fire company will be in your neighborhood on _____ and a fireman will call at your home. With your permission he will assist you in making a fire prevention inspection with a view to suggesting the elimination of any hazards that may be found. Remember, ***"An ounce of Prevention is Worth a Pound of Cure."*** Thank you for your cooperation.

, Chief
Winnetka Fire Department

This one cent postal card was mailed to each householder announcing the inspection service.

MAKING A GOOD JOB OF IT

BY WARREN Y. KIMBALL

Theoretical Nozzle Reaction in Pounds

Nozzle Pressure PSI	Size of Tips in Inches				
	⅝	¾	1	1⅛	1¼
50	29	42	75	95	117
60	35	50	90	114	141
70	41	59	105	133	164
80	47	67	120	152	187
90	53	76	135	171	211
100	59	84	150	190	234

Reaction = 1.5 PressureXDiameter squared. ($R = 1.5PD^2$)

Supplying Small Nozzle Tips at Higher Pressures

A PUMP capable of lifting 33,000 pounds of water a foot per minute develops one pump horsepower. Any given pumper can perform a certain output of work measured in pounds of water that can be raised a foot per minute or "foot-pounds." It is well known that a pumper that can deliver 500 gpm (4,168 lbs. of water) at 120 psi (276.5 ft. head) is expected to be able to deliver only 250 gpm (2,084 lbs.) at 200 psi (460.8 ft. head) and but 167 gpm (1,389 lbs. of water) at 250 psi equivalent to 576 ft. lift.

Thus it should be obvious that available pump horsepower can be used for either volume or pressure within certain practical limitations depending upon the design of the particular pump. Large capacity pumps are available that can deliver substantial volumes at relatively high pressures. For example, a modern Class A 1,000 gpm pumper can deliver 700 gpm or 5,845 lbs. per minute against a head of 460.8 ft. (200 psi). However, fire departments in suburban and rural areas depending upon small pumpers to furnish long lines often must choose between streams providing high volume at lower pressure or higher pressure and less water.

Where lines are of more than average length high pump pressures are needed to overcome friction losses in the hose and provide adequate nozzle pressures. This means that the flow will have to be limited by use of smaller nozzle tips. In addition there are many rural fires where high pressures are almost a necessity even at a possible sacrifice in the total volume of water applied.

By increasing the nozzle pressure the reach of a stream can be increased up to a certain point. Often with very hot fires it is essential to have reach of 70 to 80 ft. to protect seriously exposed property so located that a hose crew cannot operate a close range. In general, the reach of a hand line will be close to one foot per pound of nozzle pressure although the point is soon reached at which additional pressure causes the stream to "feather" badly without giving appreciable added reach. With heavy streams (large nozzle tips supplied by siamesed lines) as provided at city fires where water supplies and pumping capacities are greater, the reach may be substantially greater than one foot per pound. For example, a 2-in. tip at 50 pounds may have a horizontal reach in still weather of 115 ft. Such streams are seldom obtainable at rural fires. A table of reach of a stream from a 1-in. tip follows:

PSI	*Ft.*
50	61
60	67
70	72
80	76
90	80
100	83

It is true that higher pressures provide streams that are less mobile and more difficult to handle. Holding a 2½-in. line under high pressure is tiring work unless a nozzle holder is employed. However, the nozzle reaction measured in pounds is less for a ¾-in. nozzle at 100 psi than for a 1⅛-in. nozzle at 50 psi. (See above.)

There are instances where several relatively long lines must be supplied by a single 500 gpm pumper at rural fires. The 500 gpm machine can supply three ¾-in. tips at relatively high nozzle pressures through 500 to 1,000 ft. lines where but a single 1-in. tip might be supplied. The 350 gpm pumper can supply two ¾-in. tips at fairly high pressures. At rural fires where water supplies are seriously limited or where lines exceed 1,500 ft., ⅝-in. tips are of value.

It may be interesting that a ¾-in. stream at 100 psi nozzle pressure has three-quarters of the volume of water or cooling effect of the 1-in. stream at 50 psi but has twice the nozzle velocity.

All of the figures on this page apply to 2½-in. hose. The higher friction losses in 1½-in. hose would make high nozzle pressures impractical except for short lines. It should also be recalled that streams from small tips even at high pressures are not an adequate substitute for large nozzle tips operated at proper pressure for serious fires in all areas where water supplies are adequate. It is like the difference between the hardest punch of the bantamweight and of the heavyweight champion.

Streams with Small Tips on Long 2½-in. Lines

Nozzle Pressure	⅝ in. Tip					¾ in. Tip					1 in. Tip				
PSI	GPM	Friction PSI 500 Ft.	Pump Pressure PSI	Friction PSI 1000 Ft.	Pump Pressure PSI	GPM	Friction PSI 500 Ft.	Pump Pressure PSI	Friction PSI 1000 Ft.	Pump Pressure PSI	GPM	Friction PSI 500 Ft.	Pump Pressure PSI	Friction PSI 1000 Ft.	Pump Pressure PSI
50	80	9	59	18	68	117	19	69	37	87	209	54	104	108	158
60	88	10	70	21	81	127	21	81	42	102	229	63	123	126	186
70	95	13	83	26	96	137	25	95	50	120	247	74	144	147	217
80	102	14	94	29	109	147	28	108	55	135	264	85	165	170	250
90	108	16	106	31	121	156	32	122	63	153	280	95	185	–	–
100	114	18	118	35	135	165	35	135	70	170	295	102	202	–	–

All pump pressures exclusive of elevation.
Horizontal lines indicate limits of performance of many 500 gpm pumpers.

A 60 year old hose reel and hand drawn ladder truck shown with Marion's pumper.

Sixty Years of Volunteer Fire Service in Marion, Kansas

THE volunteer fire department of Marion, Kansas (member NFPA), has been on the job for sixty years of recorded history. This summer the citizens of Marion paid tribute to their fire fighters in a special celebration. Special honors went to Joe Swan who retired after 41 years of service including 30 years as chief. Mayor R. R. Melton presented a gold honorary fire chief's badge to Chief Swan and a silver fire chief's badge to present fire chief Fred Knackstadt a veteran fire fighter with 19 years of service in the department. The Mayor presented "Certificates of Appreciation" to 13 volunteers with individual service records of from 10 to 59 years. The longest record for service was held by Ed. L. Freeland, treasurer of the local firemen's relief association for many years.

A special award was presented to insurance agent Alex H. Case for many years of fire prevention service in Marion. Mr. Case in his turn presented an interesting and comprehensive history of the Marion Fire Department from the organization of Hose Co. 1 in 1888.

The presentations followed a "Dutch" luncheon shared by the Fire Department, Chamber of Commerce, and invited guests. Guest speaker was State Fire Marshal Clyde Latchem (member NFPA Fire Marshals' Section) who complimented retiring Chief Joe Swan and Mayor Melton for their initiative in fire prevention work.

The Marion Fire Department history reported by Mr. Case included the following "human interest" items:

"The first record of any formal meeting was that of Hose Co. 1 held in the parlors of the Elgin Hotel on January 7, 1888 with 11 members present. At the next meeting the City Room was available free of charge and was made headquarters.

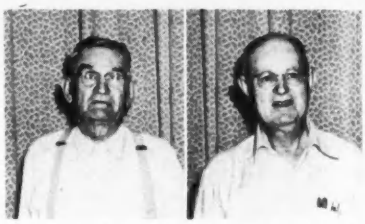
"The meeting of February 3, 1888 found a committee being appointed to report on suitable uniforms and this ended in the purchase of 20 yards of flannel to be made into blouses at a cost of 83 cents each. Caps and a shield for the blouse later constituted the official uniform.

"The meeting of February 3, 1888 adopted a resolution making a fine of 50 cents for use of profane language in the meetings. At the meeting of February 23, 1888 dues were set at 50 cents. Thus early fire fighters paid for the privilege of holding their exalted positions.

"In the meeting of March 16, 1888 a committee from the Hook & Ladder Company was in attendance to urge that Hose Company No. 1 join them in an effort to elect members to the City Council who would work for the Fire Department.

"The meeting of October 17, 1888 is highlighted by the motion that each member try to secure subscriptions toward buying a fire bell.

"It seems that in connection with a dance scheduled for December 31, 1889, total expenses were $37.95 to be deducted from the sale of 44 tickets at $1 each, leaving a net profit of $6.05. Inspired by the success of this enterprise a committee was appointed to investigate an oyster supper. In a meeting of April 30, 1891 we find motion being made to dispose of cash accumulations for the purchase of a box of cigars and a case of beer to be enjoyed by the company. The treasurer reported insufficient funds for the purchase of the beer.



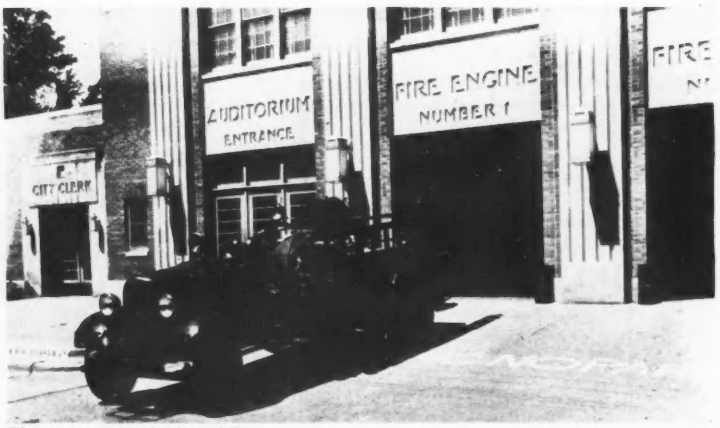
Honorary Chief Joe Swan headed the Marion fire fighters for 30 of his 41 years in the department. Right, present chief Fred Knackstedt.

"The meeting of May 28, 1891 indicated a further desire to improve the position of Hose Co. 1 by a motion to investigate the purchase of rubber suits. Also a fine was imposed upon members not attending without reasonable cause. This brought results as indicated by the following excused absences John Russell sick, Charles Butterfield tired and somewhat knocked out, Sam Woods kicked by a mule, Tom Kellett unfit for service, and Harve Jetmore fined one bottle of beer especially for the secretary's use. The first mention of fire drill occurred during this meeting when the company marched in single file and oiled the cart, unreeled and rereeled the hose and found one section badly burned.

"In the minutes of September 8, 1892 we learn that members were meeting at the Rink Livery Office to be measured for coats and hats which were being furnished by the City. Apparently the fire equipment found private use because in the meeting of April 3, 1896 we find the chief ordering all hats, coats and lanterns to be returned at once.

"The first order of business on December 19, 1896 was to appoint a committee to try to collect from the July 4th finance committee the prize money won by the company. Also at this meeting a move was started to join the State Volunteer Firemen's Association.

"In 1918 Chief Swan took over two hose carts with 700 ft. of rotten fire hose to protect the fortunes of Marion. In 1918 a Reo truck was purchased and later traded for a Chevrolet chassis still in use. In his 30 years as fire chief Joe Swan has had only two uncontrolled fires. Today we have the fog nozzle, wet water, CO_2 and many other extinguishing agents to assist our firemen and hope to soon have a new truck."



Photos courtesy Marion Record-Review

Handsome new municipal auditorium and fire station at Marion, Kansas. Space is provided for a new fire truck to supplement the present pumper.

Bad Weather Does Not Stop Fire Training at Camden, Maine

By Chief Allen F. Payson

RUGGED weather does not stop the fire training program of the Fire Department of Camden, Maine. During the cold weather months from November 1 to May 1, the officers have two drills per month. These are devoted to a study of all new methods and equipment we can get hold of. We pick each subject apart for the possible bad qualities for our location, and also for the good we can get out of it. We use FIREMEN as one of our sources of information. These classes last for two hours a night and each officer gets a chance to act as instructor so that he will be able to instruct his own crew during summer drills.

We take up subjects such as fire prevention, building construction, (using plans of our local buildings) and we give them a going over so as to be acquainted with each and every public and business block, factory, hotel, and rooming house with special attention to life safety features. Our officers' class consists of ten men, and any one of the group is able to direct fire fighting operations in any building in town without a lot of shouting orders and without making our department a laughing stock. Often we have interested citizens in at these meetings and have obtained 100 percent co-operation from all the town's people.

During the warmer months (May 1 to October 15) we hold drills of the full department with company officers responsible for the success of the drills. They are under the supervision of the Chief and two deputies. The drills consist of hydraulics and pump relay, pump operation practice, hose layouts, ladder work, tools, and appliances, life saving and first aid, and various other fire department evolutions. These drills are planned by the officers' winter classes. The only difficulty is from running into bad weather. When this happens we have a miniature fire department which reproduces all of our equipment and various types of local buildings. These are set on tables as shown in the picture. This method of training has done wonders for us in keeping up the interest of our volunteers by setting up reproductions of portions of our town.

Miniature hydrants are placed as they belong in relation to buildings. Toy trucks are equipped with various sizes of hose representing booster, 1½-in. and 2½-in. sizes. Lines are placed on the building specified by one of the officers and miniature equipment used includes hose clamps, hose bridges, water thiefs, wyes, siamese connections, hydrants and gates, road closed signs, ladders, deluge guns, nozzles, double male and double female connections, suction hose, etc. All hose couplings and other equipment were made from small oil fittings and connect with similar suction and outlet fittings on the engines.

Gene's Photo Shop

Officer's training group of the Camden, Maine, fire department. Chief Allen F. Payson kneeling second from left with hand on resuscitator.

Firemen gather around model buildings and equipment with which Camden fire problems are simulated on stormy nights when outdoor practice is impractical.

New NFPA Committee

A NEW NFPA committee under the chairmanship of Chief Henry G. Thomas of the Hartford, Conn., Fire Department is being organized to have jurisdiction over both the NFPA Standards on Municipal Fire Apparatus and the Standards on Rural Fire Apparatus, formerly handled by separate committees.

It is anticipated that the new committee will also deal with various other items of fire department equipment. The personnel is to include a broad representation of the fire service and other public officials, manufacturers and insurance interests. The old Committee on Municipal Fire Apparatus is being discharged and the NFPA Committee on Farm Fire Protection no longer handles Standards on Rural Apparatus.

Volunteer Firemen in the Comics

REAL LIFE COMICS Magazine for September contains a picture story entitled "Unsung Heroes," reporting the activities of volunteer firemen of America. The story is written by President Charles S. Strong of the Manhasset-Lakeville Fire Department, Long Island, New York.

Fire Took No Su[illegible]

Aside from Deaths and Injuries, the Fire Losses Depic[illegible] Here

←**New York, N. Y., Sept. 4,** *Acme*
A U. S. Marine Corps Vought Corsair on routine training flight left formation and crashed into this house in the Bayside Section not far from LaGuardia Field. The plane and house were completely in flames when first firemen arrived. The pilot and two women in the house were killed.

New York, N. Y., Sept. 3, *Acme* →
This 5-alarm fire swept an East River warehouse. Note how heavy streams from water tower and wagon pipes are concentrated near wall of adjoining 4-story factory.

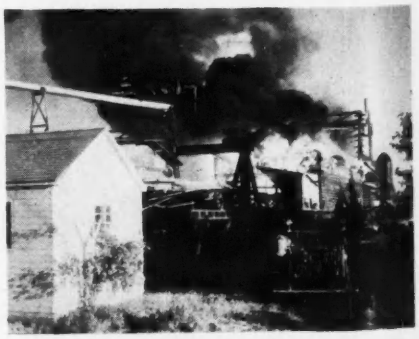
←**Plainville, Conn., Aug. 23,** *Acme*
A National Guard F-47 Thunderbolt fighter crashed in front of this house, breaking a water main and setting fire to three houses. The pilot was injured in a parachute landing and a woman was slightly burned in the fire.

Clifton, N. J., Sept. 3, *Acme* →
The 1-story combustible building of the Clifton Adhesive Co. plant was destroyed when sparks from a mixer ignited a pail of solvent resulting in an explosion. Firemen used a foam generator in extinguishing the flammable liquids.

←**Allison Park, Pa., Sept. 3,** *Acme*
Eight men in bucket brigade fill tank on Shaler Twp. truck as $100,000 fire sweeps lumber yard and business buildings. Rural trucks should be equipped to take suction and carry 3 or more lengths of small suction hose for replenishing tank supplies from open water sources.

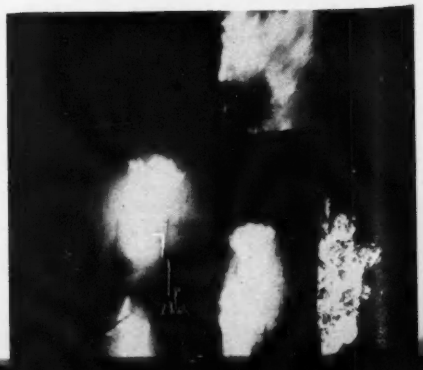
Lebec, Calif., Aug. 4, *Acme* →
Twelve buildings and several trucks were destroyed when an explosion occurred as a tank truck was unloading at the General Petroleum Oil Refinery.

←**Reno, Nev., Aug. 15,** *Acme*
Two boys admitted starting this fire in basement of vacant 1-story store building. While firemen were inside fighting blaze a serious explosion occurred, wrecking building, and killing 3 firemen and 2 spectators. Nineteen firemen and 300 civilians were injured, 36 of them seriously. The photo was taken immediately following the unexplained blast.



Springfield, Ore., July 24, *State Fire Marshal*→
The Summerbell Roof Structure Mill was destroyed by fire starting under the planer shed. Heavy damage was done to the adjoining Delta Lumber Co. Watchman of an adjoining plant gave alarm. Private hose could not be used as tank had been drained. Pumpers supplied lines from mill ponds.

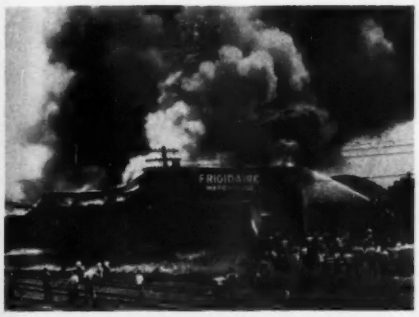
←**Turlock, Calif., Aug. 20,** *Acme*
A $100,000 fire of possible incendiary origin destroyed fruit sheds and 20 empty freight cars. This aerial view gives a good idea of the fire fighting problem where long frame buildings are mutually exposed.



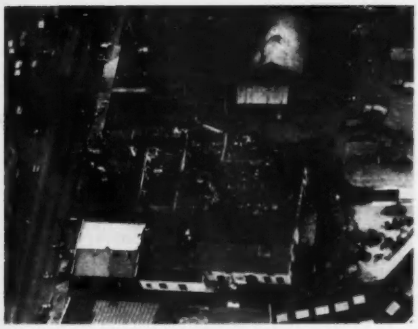
Mascoutah, Ill., July 8, *Del Hoercher* →
Fire, possibly due to slipping belt, destroyed this 55-year-old, 100,000 bushel grain elevator of metal clad heavy plank and timber construction. Located in a congested area, the volunteer firemen had studied this problem for 20 years and knowing how to make best use of available water, supplied 9 2½-in. lines and a deluge set with 5 pumpers.

ıner Holiday This Year

Depic Here Would Exceed the Annual Budget of Many Cities



←**St. Louis, Mo., Aug. 19,** *Acme*
Fire starting in outside refuse destroyed the north section of this unsprinklered warehouse for refrigerators, washing machines and other electrical equipment. The property was remote from hydrants and first aid extinguishers used by employees were criticized as inadequate. When the first company arrived in response to a still alarm the building was seriously involved and four alarms followed. Loss: $758,000.



Detroit, Mich., July 27, *Acme* →
Fire of unknown cause starting in fan room on roof of 105-ft. high grain elevator of plank, metal-clad construction, destroyed elevator and adjoining 4-story brick boiler and drying building. The elevator contained 250,000 bushels of grain, mostly malted barley. The plant watchman sounded the first of 5 alarms and 36 hose lines were discharged through deluge sets, ladder pipes, and turret nozzles. Absence of wall openings handicapped firemen. One serious explosion occurred. Note sheet metal debris covering aerial truck. Loss: $1,000,000.

←**Chambersburg, Pa., July 12,** *Ken Plummer*
Fire blamed on explosion of fumes of escaping gasoline seeping from a nearby filling station to a store basement, swept this closely built group of business structures having communicating wall openings unprotected by fire doors. Loss may reach $300,000.

→
Des Moines, Iowa, July 19, *Register & Tribune*
More than $282,000 loss resulted when lightning started fire in the attic of the Wakonda Country Club. Rapid spread of fire in the large brick-veneered building and limited water supply were blamed for the big loss.

←**Wapato, Wash., Aug. 12,** *Wide World*
The Yakima Fruit Growers Assn. warehouse was destroyed when gasoline used to clean machinery was ignited by match or cigarette. Local firemen were aided by companies from Toppenish, Zillan, and White Swan. Loss $400,000.

Seattle, Wash., July 6, *Acme* →
Four men died in explosion at this fish oil recovery plant when solvent fumes from retort cooker ignited. Foam and heavy streams were used. Loss: $450,000.

←**Oakland, Calif., July 8,** *Oakland Tribune*
Believed spark from lumber mill incinerator ignited lumber shed. Fire spread to foundry. Large area of combustible construction and lack of sprinklers are blamed for the $105,000 loss.

←**Norwalk, Conn., Aug. 4,** *Wm. Bartfay*
Sprinklers were planned but not installed when flash fire occurred in plant printing on plastic shower curtains. Employees fought flames 20 minutes before giving alarm. Firemen aided by fire doors kept fire from lacquer storage area. Loss: $148,000.

Chicago, Ill., Sept. 6, *Wide World* →
Fourteen persons lost their lives and 10 others injured by a cornstarch dust explosion while employees were fighting a fire in this huge candy factory. Fortunately the blast occurred before the day shift began or many more might have been killed. The explosion disrupted the sprinkler equipment. Loss estimated upward of $500,000.

CARPENTER LIGHTS

Clears *your* side of the way, too, as well as warns those approaching.

Flash'N Wag

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Write For Folder

In a class by itself. Combination flashing, oscillating WIG-WAG Redhead. Beam range 1000 feet ahead, visible for miles. Safer, faster, quieter runs. 6" and 8" diameter sizes.

"Master-Light-Makers for 34 Years"

CARPENTER MFG. CO.

168 MASTER-LIGHT BLDG.
BOSTON - 45 -
SOMERVILLE, MASS.

HALE Type FZZ Portable Pumping Unit Fights Brush Fire from Moving Truck

Picture shows a Hale Type FZZ Portable Pumping Unit fighting a brush fire from a moving truck. The unit can be mounted or carried on virtually any type of equipment, making it possible to fight fire while in motion, using a booster tank for source of water.

The FZZ will supply from draft, 60 U.S. Gallons per min. at 90 lbs. pump pressure; and 150 U.S. Gallons per min. at 30 lbs. It can supply two capable fire streams through 1½" lines with ½" tips.

Write for FZZ folder to:

HALE FIRE PUMP COMPANY
Conshohocken, Pa.

Coming Events

Fire Prevention Week October 3-9

THE NFPA Executive Office has experienced an unprecedented demand for supplies of the 1948 Fire Prevention Week material which was announced to members in the September FIREMEN. This is a last minute reminder of the importance of Fire Prevention Week to the public as well as to the fire service.

NFPA Northeastern Fire Protection Conference

A regional meeting of the National Fire Protection Association will be held at Hartford, Conn., October 28–29. This meeting is the second Northeastern Fire Protection Conference sponsored jointly by the Hartford Fire Department and the NFPA. Chief Henry J. Thomas assures a hearty welcome to all NFPA members and fire service personnel who will find it convenient to attend. The meeting is designed primarily for persons in the northeastern states of the United States and the eastern provinces of Canada. Chief Thomas has the support of an active Hartford committee headed by John Ashmead of the Phoenix Insurance Company. Sessions will be held in the auditorium of the Aetna Life Insurance Company building.

First Session

Thursday Morning, October 28

Chairman: Chief Henry Thomas, Hartford F. D.

"Applications of Lessons Learned at Fire Service Conferences" — J. E. Jagger, General Manager, International Assn. of Fire Chiefs.

"Risks We Face Today" — a symposium — Paul W. Eberhardt, Vice-President, Walter Kidde Co., and Laurence J. Ackerman, Dean of the University of Connecticut.

"Fire Protection from the City Managers' View Point" — Carleton F. Sharpe, City Manager, Hartford.

Panel — "Making Fire Prevention Work" — by a group of Fire Prevention Committee Chairmen of various cities noted for successful fire prevention programs.

Second Session

Thursday Afternoon, October 28

Chairman: C. W. Pierce, President, Factory Insurance Association and Past-President, NFPA

"Fire Prevention in Youth Education" — a film.

"The Woman's Angle in Fire Prevention" — Miss Dorothy Downs, Firemen's Mutual Insurance Company, Providence, R. I.

Panel — "Northeastern Problems" — state fire marshals interrogated by a group of well known fire chiefs.

Panel — "The Fire Chief's Dilemma" — Financial problems of fire departments will be explored by Manager Percy Charnock, New England Fire Insurance Rating Organization; Chief Paul Heinz of New Haven, Conn.; Chief William H. Hill of Belmont, Mass.; and Leslie Gravlin of Governmental Research Institute of Hartford.

Open house at FIA Fire Safety Laboratory and at the Aetna Laboratory.

Third Session

Thursday Evening, October 28

Chairman: William R. Ford, Factory Insurance Association, Chairman, NFPA Committee on Public Relations

"Fire Prevention Education in Public Schools" — demonstrations of fire safety instructions in Hartford public schools presented by Fred. D. Wish, Jr., Superintendent of Public Schools, Hartford.

"Demonstrations — A Means of Visual Education in Fire Prevention" — F.P.O. Porter, Aetna Life Affiliated Companies.

Fourth Session

Friday Morning, October 29

Chairman: John L. Wilds, Chicago, President, NFPA

NFPA Technical Activities — Robert S. Moulton, Technical Secretary, NFPA. A discussion of NFPA technical standards, their development and use.

Panel — "Developments in Fire Waste Control" headed by Moderator, H. E. Newell, National Board of Fire Underwriters, will deal with water supplies, field practice, inspection and electrical hazards.

"Fire Problems in Industry" — Paul C. Lamb, Chief Safety Engineer, Lever Brothers Co.

Fifth Session

Friday Afternoon, October 29

Simultaneous Committee Conferences. (NFPA committee officers will outline current developments in their respective fields and persons present will have an opportunity to ask questions and make suggestions regarding matters under discussion.)

A. **Safety to Life from Fire**
Chairman Francis R. Scherer, NFPA Committee on Safety to Life will discuss life safety from fire in schools, places of public assembly, and including all phases of building exits and exit drills.

B. **Flammable Liquids and Gases**
Chairman H. L. Miner, NFPA Committee on Flammable Liquids, and Chairman H. E. Newell, NFPA Committee on Gases will discuss hazards of gasoline storage, liquefied petroleum gas and other flammable liquids and gases.

C. **Special Extinguishing Equipment**
Chairman Allen L. Cobb, NFPA Committee on Special Extinguishing Methods will discuss latest developments in carbon dioxide, foam, fog, wetting agents and new extinguishing agents.

D. **Air Conditioning and Blower Systems**
Chairman F. H. Faust, NFPA Committee on Air Conditioning, and Chairman W. M. Jones, NFPA Committee on Blower Systems will discuss safeguarding of air conditioning, ventilating, blower and exhaust systems.

Friday afternoon from 4 to 6 p.m. the Aetna and FIA Laboratories will again hold open house.

Dover, Delaware Celebrates Stamp Honoring Volunteer Firemen

A "triple celebration" is being planned in Dover, Delaware, on October 3 and 4 in connection with the opening sale of the new U. S. postage stamp commemorating volunteer firemen. Plans provide for a parade of all Delaware volunteer fire companies on the afternoon of the 3rd followed by ceremonies housing two new pieces of apparatus and the dedication of the recently constructed addition to the Robbins Hose Company fire station. Following these ceremonies, Dover Firemen will observe "open house" with a large number of exhibits arranged throughout the fire house showing the progress of the volunteer fire fighters.

On October 4, ceremonies will be held in front of the post office where a Post Office Department representative will deliver an address officially placing the new stamp on sale. Following will be a luncheon for invited guests at the Hotel Richardson. An evening meeting at the fire house will launch the Fire Prevention Week program.

Legislation for this special stamp honoring volunteer firemen was sponsored by Representative J. Caleb Boggs of Delaware.

Fire Marshals and Fire Chiefs to Meet in Miami, Florida

THE Fire Marshals Section of NFPA including state, county, and city fire prevention officers will hold their winter conference at the Robert Clay Hotel, Miami, Florida, November 10–11. Fire Marshal George W. Clough of Nassau County, New York, is chairman of the NFPA Fire Marshals Section. The International Association of Fire Chiefs will hold their 75th Annual Convention, November 9–12, at Miami, with headquarters at the Everglades Hotel. Sessions will be held in the Municipal Auditorium. NFPA Director Frank C. McAuliffe, Chief of Patrols, Chicago, is President of the IAFC.

Topics to be discussed by the chiefs include the use of "wet water" in controlling brush and forest fires, radio for the fire service, fire department ambulance service, carbon dioxide for use in protecting high value property, volunteer fire departments, practical methods for the bolstering of small departments, planning for civilian defense in case of emergencies, chemical and explosive problems facing the fire fighter, the legislation of fire prevention, and the work of the American Municipal Association.

NIGP Third Annual Conference

THE Third Annual Conference of the National Institute of Governmental Purchasing, Inc. will be held in Philadelphia, on October 18, 19 and 20 at the Hotel Bellevue Stratford. Governmental organizations, including fire departments, spend nearly one billion dollars yearly on municipal purchases in this country. The NIGP is an organization of governmental purchasing agents whose purpose is to help governmental authorities with purchasing problems.

●

Winnetka Firemen Go Looking for Fires

(*Continued from page 8*)

department be called first. Accompanying the letter is an attractive reprint of a *Reader's Digest* article by Paul Kearney entitled "How to Protect Your Family from Fire." Also included is a card calling attention to the Winnetka Fire Department's extinguisher inspection and recharging service conducted for citizen's at cost and urging annual inspection of fire extinguishers.

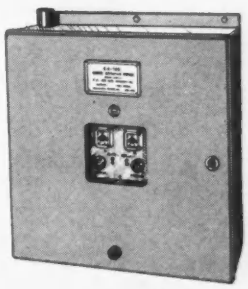
At fire headquarters a duplicate card index is maintained of all postal cards mailed to householders with notations "Inspected," "Refused," "Not Home" and the signature of the inspector posted for future reference, on which fire incidents as well as fire causes are recorded.

Teach fire prevention of course ...but be sure you have modern fire protection by

All the training, all the good housekeeping requirements are necessary. Even then . . . a stray spark or short circuit just seems to happen . . . a fire starts. That's when you need modern, quick-acting C-O-TWO fire protection. C-O-TWO is dry, clean carbon dioxide gas . . . snuffs out the fire in seconds, then disappears without a trace. It is non-contaminating, non-damaging, non-conducting and non-corrosive.

There are areas in your plant that particularly need C-O-TWO fire protection: spray booths, dip tanks, solvent baths, electrical equipment enclosures, lift trucks, pump rooms, anywhere there's danger of flammable liquid or electrical fires. For complete fire protection in enclosed areas such as record vaults and store rooms, install the new C-O-TWO Combination Smoke Detecting and Fire Extinguishing System. This new system is a 24 hour a day automatic watchman.

Let an expert C-O-TWO Fire Protection Engineer advise you on your fire protection needs now, before fire strikes. Just clip this advertisement to your letterhead or calling card and mail for complete information about modern C-O-TWO Fire Protection Equipment. Remember fire doesn't wait . . . act now!



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INDUSTRIAL SMOKE DETECTING CABINET

C-O-TWO

C-O-TWO FIRE EQUIPMENT COMPANY
NEWARK 1 • NEW JERSEY
Sales and Service in the Principal Cities of United States and Canada
AFFILIATED WITH PYRENE MANUFACTURING COMPANY

PROPELLO-RAY *LIGHT*

Simultaneously alerting pedestrians and all traffic . . . while insuring safety to your vehicle and crew . . . the compelling effect of the Propello-Ray's roving blade of red light gets you *through*.

Double action means quicker re-action—for the natural warning of red is intensified in the Propello-Ray Light by a sweeping, rotating beam that can't be ignored.

Any hour . . . any season . . . the urgency of your call is dramatically announced with scintillating silence . . . there are no noisy gears or complicated parts in the high candlepower, sealed-beam Propello-Ray Light. All moving parts are handsomely encased in streamlined chrome weather-proof housing to guarantee dependable, satisfying service.

FEDERAL ENTERPRISES, Inc.

formerly **FEDERAL ELECTRIC CO., Inc.**

8717 SOUTH STATE STREET • CHICAGO 19, ILLINOIS

The Original MIDWESTERN Yellow Striped Safety Coat Is Again Available . . .

for Men of Action!

Here's Protection and Comfort in Your Hazardous Work of Safeguarding Life and Property Against FIRE!

Modern fire fighting calls for *specialized* protective clothing . . . clothing that safeguards the fireman's life on every run . . . clothing that enables him to use his equipment to the fullest advantage.

Every Midwestern product combines the thoughts and suggestions of practical Fire Chiefs and firemen from every section of the country . . . and every purchaser profits from years of Midwestern research and experience. That is why the famous Mackinaw Coat and other Midwestern clothing have embodied in their design every feature necessary for the protection and comfort of firemen.

In our vast selection of crude rubber materials you will find a type of fabric suitable for your climate and needs. The softness and flexibility in the high-grade materials used are your assurance of long time service and comfort. Many Fire Chiefs are now including Midwestern clothing in their regular yearly budget and by placing your order early you can be assured of this adequate protection when needed.

For complete information have your Midwestern dealer show you our new garments now manufactured from crude rubber compounds. A letter to the factory will also bring you material samples for your inspection.

We now have available: White, Ivory and Brown crude rubber coats for Chiefs, Assistants and other officers; also all sizes short and ¾ length felt lined Firemen's boots for immediate shipment.

NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN MFG. CO. MACKINAW ILLINOIS

Manufacturers of the Famous MACKINAW Coats

MEMBERSHIP REPORT

MEMBERS of the Volunteer Fire Company Section of the National Fire Protection Association are urged to renew their membership promptly upon expiration. Quite often it is the case that the renewal is received late and the NFPA is at times unable to supply the back issues because of the great demand for FIREMEN.

At the present time membership in the Volunteer Fire Company Section stands at 1,372 member companies with 21,442 men receiving the valuable information contained in the publications.

National Fire Protection Association, International

Associate Membership

VOLUNTEER FIRE COMPANY SECTION ($12.50 annual dues) Eligible:

(1) all bona fide volunteer fire organizations in any community.

(2) all fire departments and companies in communities of less than 25,000 population.

(3) all industrial fire brigades.

Member volunteer fire companies receive ten copies of FIREMEN magazine each month, mailed to the homes of individual firemen. Beyond the ten, additional copies of FIREMEN cost $1 per year.

Volunteer Fire Company Section members, receive, at their headquarters, one copy of all publications sent to NFPA associate members.

ASSOCIATE MEMBERSHIP ($12.50 annual dues) Eligible: Individual fire department officers, firemen, and others interested in fire safety. NFPA associate members in the fire service receive: one copy of FIREMEN magazine monthly, the NFPA **Quarterly**, the monthly **News Letter**, technical standards, popular bulletins and posters.

All associate members have one vote in Association affairs.

Phil Buckets sez—

'NOW'S THE TIME . . .'

to prevent a chimney fire next winter."

SEEMS kind of silly, maybe, to be talking about preventing chimney fires while it's still summer, but Phil knows that unduly voluntarily makes repairs to a defective chimney in the middle of winter. Once the heating season is started the chimney stays as it—and so does the rest of the heating equipment.

SO, if fires from defective equipment or chimneys are to be avoided, the time to do it is right now before the equipment is needed, and before repair men become swamped with work.

ACCORDING to Phil's way of thinking, a man ought to have a warm place in which to sit and reflect on those cold days when business in the elevator is slack. But it's kind of ridiculous, he says, if you've shoved the place may catch fire any minute.

This is no time to take chances . . .

GRAIN DEALERS NATIONAL MUTUAL FIRE INSURANCE CO.

Indianapolis 7, Indiana • Omaha 1, Nebraska

Readers of "Our Paper" edited by NFPA Director R. D. MacDaniel and published by the Grain Dealers National Mutual Fire Insurance Company of Indianapolis and largely devoted to fire safety in rural grain elevators have become familiar with "Phil Buckets" the handy-man cartoon character who calls attention to some common fire hazard situation each month. Reproduced above is a "Phil Buckets" poster containing sound philosophy that might well be heeded by a lot of folks besides grain elevator operators.

ELIMINATE DELAYED ALARMS!
PROTECT PRODUCTIVE CAPACITY...

GAMEWELL FIRE ALARM BOXES

Adequately distributed throughout the city — one at every fire hazard — provide the means for eliminating Delayed Alarms and consequent fire waste — their service record explains why Cities Prefer Gamewell.

History's pages are lighted by conflagrations destroying cities and industries — and retarding progress. Now — with the entire world depending upon American industry to rebuild war ravaged areas our fire losses were never greater nor the consequences of fire more far reaching.

Fire consumes physical values — *delay in calling the Fire Department not only accelerates the burning rate of physical values but is responsible for the destruction of productive capacity.*

We invite your inquiry.

THE GAMEWELL COMPANY

NEWTON UPPER FALLS 64, MASSACHUSETTS

IN CANADA: NORTHERN ELECTRIC COMPANY, LTD., MONTREAL

75 YEARS OF SERVICE

1873 — 1948

75th ANNIVERSARY

A REAL MARK OF DISTINCTION

Back in 1873 this company started manufacturing pumps — we have never stopped. Today our Barton-American fire pumps are operating throughout the entire country — yes, even the world. These 75 years of continued service and experience are your guarantee of quality.

AMERICAN-MARSH PUMPS, INC.

BATTLE CREEK • MICHIGAN

Makers of Barton-American Mid-Ship & Front Mounted Fire Pumps

IN CANADA: C. E. Hickey & Sons, Limited, Hamilton, Ontario

TURN YOUR SPARE TIME INTO PROFITS
$84.00 A WEEK FROM 2 SALES A DAY

Sell RANDOLPH Fire Extinguishers

Every building holds a prospect — Homes, Boats, Cars, Garages, Gas Stations, Shops, Laundries, Farms, Hotels, Stores, Factories.

THEY WANT A RANDOLPH with its panic-proof trigger action that smothers the fire instantly in a snowy blanket of carbon dioxide. No mess, no water, no damage, even to food. It evaporates without a trace.

YOU CAN QUALIFY for exclusive territory to sell the famous, nationally advertised Randolph used by leading industrial concerns everywhere.

Approved by Underwriters' Laboratories

Quick profits await those who act at once. Four sales a day net $168.00 a week. Write today for full or part-time plan, territories, demonstration kit, etc. Don't delay.

RANDOLPH LABORATORIES, Inc.

5 EAST KINZIE STREET — CHICAGO 11, ILLINOIS

Chart Shows Pump Pressures for Supplying Heavy Streams

WAGON PIPE 2 PUMP OPERATION USING WAGON PUMP

SIZE NOZZLE IN INCHES	PUMPER AT HYDRANT	WAGON PUMP	DELIVERY IN G. P. M.
2½" HOSE			
1⅝	20+15	115	500
1¾	20+25	115	600
1⅞	20+30	115	700
1¾	20+40	115	800
3" HOSE			
1⅝	20+8	110	500
1¾	20+8	110	600
1⅞	20+11	110	700
1¾	20+14	110	800

WAGON PIPE ONE PUMP OPERATION

SIZE NOZZLE IN INCHES	NUMBER OF LINES 1	2	3	DELIVERY IN G. P. M.
2½" HOSE				
1⅝	100+55	100+15	100+7	500
1¾		100+20	100+10	600
1⅞		100+30	100+14	700
1¾		100+35	100+17	800
3" HOSE				
1⅝	100+21	100+8	100+3	500
1¾	100+30	100+8	100+4	600
1⅞	100+40	100+11	100+5	700
1¾	100+80	100+15	100+6	800

LADDER PIPE

SIZE NOZZLE IN INCHES	NUMBER OF LINES 1	2	3	DELIVERY IN G. P. M.
2½" HOSE				
1⅝		145+15	145+7	500
1¾		145+20	145+10	600
1⅞		145+30	145+15	800
3" HOSE				
1⅝	145+20	145+8	145+3	500
1¾	145+30	145+8	145+4	600
1⅞	145+40	145+11	145+5	700

PORTABLE MONITOR NOZZLE

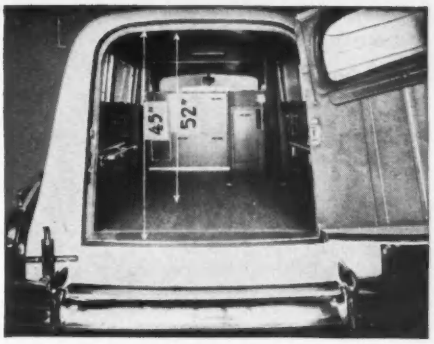
SIZE NOZZLE IN INCHES	NUMBER OF LINES 1	2	3	4	DELIVERY IN G. P. M.
2½" HOSE					
1⅝		100+30	100+13	100+9	700
1¾		100+38	100+17	100+10	800
2		100+55	100+25	100+15	1000
3" HOSE					
1⅝	100+40	100+11	100+5	100+3	700
1¾	100+50	100+15	100+7	100+4	800
2		100+21	100+10	100+6	1000

THE Fire Department of the District of Columbia (Washington, D. C.) maintains an excellent school for instruction of pump operators. To enable operators to supply the correct pressures on the fire ground as called for by the DCFD Pump Operators Manual without depending upon memory, Superintendent of Machinery I. J. Dalstrom has equipped each pumping engine (including pumpers serving as hose wagons) with charts or plates developed by Battalion Chief A. M. Grunwell showing the correct pressures for heavy stream layouts as employed by the department.

The operations covered by these charts include wagon pipe operations using both pumper at hydrant and pump on the hose wagon at the fire; operation of wagon pipe using pumper at the hydrant only; operation of ladder pipe; and operation of portable monitor nozzles. Special DCFD instructions in use of water towers were reported in FIREMEN for January 1948.

The psi figures in each operation include a constant base figure plus an added allowance for friction loss per 100 ft. of hose. Further information can be obtained from Superintendent Dalstrom. Copies of the DCFD Pump Manual are available on request to Chief Clement Murphy, DCFD.

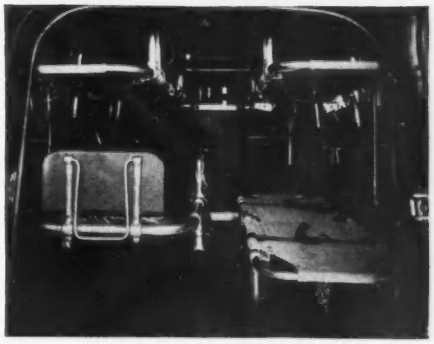
TWO TRADE MARKS OF DISTINCTION
COMBINED IN S & S AMBULANCES



More Inside Headroom and Higher Rear Door Loading Clearance. Inside Height—52". Height at rear door opening—45".

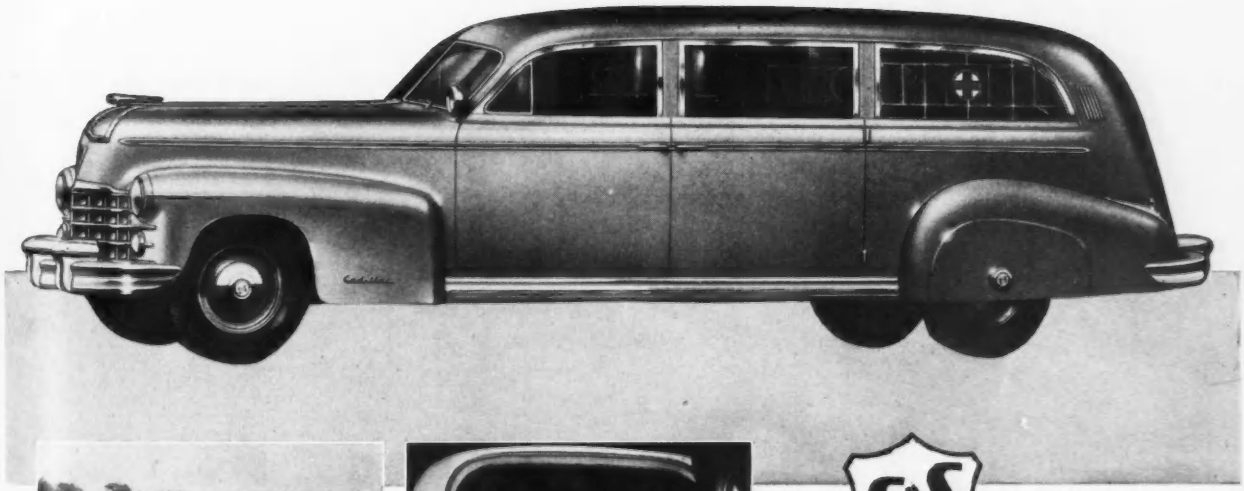
In styling, in utility, in inside roominess, in its Hi Strength Steel Construction, in lasting service—the S & S Kensington Ambulance stands supreme.

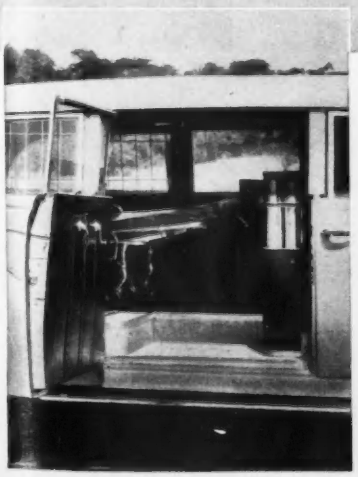
Get the Best — Get S & S

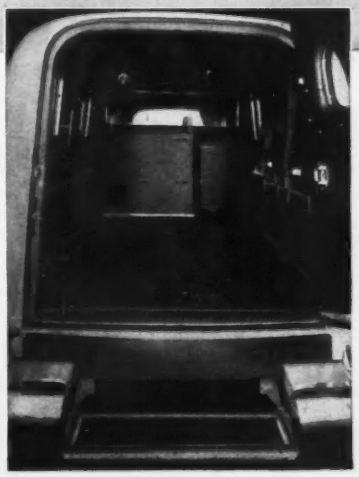


Four Patient Capacity

THE HESS & EISENHARDT COMPANY
Builders of Sayers & Scovill Ambulances
Rossmoyne (Cincinnati), Ohio







S&S DELUXE
Kensington

Entrance Well at Side Door

A Special Convenient Rear Step

CAIRNS

In Regulation or Drop Brim Style — With 8 - Comb or Solid Top.

LEATHER HELMETS

Made of tough top-grain leather specially processed to give strength and heat resistance, these rugged helmets have been preferred by generations of firemen, the world over. With the CAIRNS SELF - ADJUSTING CUSHION LINING they afford the maximum of comfort as well as of protection and durability. Write for Catalog 330 and price list of America's most complete line of firemen's equipment.

CAIRNS & BROTHER
Outfitters to Firemen Since 1836
(ALLWOOD), CLIFTON, N. J.

Chief Albert W. Kimball
HINGHAM, MASSACHUSETTS
Says "Our 3 stations are equipped with Circul-Airs used almost daily for over 7 years . . . have not spent a cent on upkeep or repairs and our hose is always ready for service . . . they are tops in hose drying."

CIRCUL-AIR

FIRE HOSE DRYER

Makes good hose last longer, prevents mildew and rot. Keeps all hose in service, saves time, man-hours, and valuable space.

WRITE FOR FREE CATALOG

THE CIRCUL-AIR CORPORATION
575 East Milwaukee Street
DETROIT 2 ◆ MICHIGAN

MANUFACTURERS' ANNOUNCEMENTS

National Foam Acquires "Drench"

NATIONAL Foam Systems, Inc., Philadelphia, foam fire fighting manufacturers, announce the purchase from Arnold, Hoffman & Company, Inc., Providence, R. I., of its good will, patents, formulae and trademark covering the wetting agent known in the fire fighting fields as "Drench."

"Drench" will be manufactured at National Foam System's principal plant at West Chester, Pa.

New Portable Electric Hand Lamp

MANUFACTURED by the U-C Lite Manufacturing Co., 1050 Hubbard St., Chicago 22, Ill., the principal features of this new "Big Beam" lamp include spillproof rechargeable battery with a leakproof, acidproof plastic case. With the usual storage battery attention, the manufacturer states that this battery will have a service life of from 3 to 5 years. Incorporated in the battery itself is a charge indicator that eliminates all guesswork and does away with hydrometer tests. A built-in charger that plugs into any 110-volt A.C. circuit makes recharging an easy matter.

The container for battery and charger is of 18-gauge welded steel. A window is provided in the container so that the charge indicator can be seen at all times.

Aladdin Announces New Inline Foam Proportioner

AN Inline Proportioner for feeding liquid foam into water lines has been announced by the Aladdin Proportioning Equipment Company, Inc., 119 West 57th St., New York 19, N. Y. Eliminating the use of a pump, this proportioner is said by the manufacturer to have an 80 per cent pressure recovery, maintaining proper proportions while operating at pressures ranging from 40 to 150 psi. It will proportion 6 parts of foam liquid to 94 parts water at any point along the line. It can be attached directly to a hydrant, placed on the ground between lengths of hose or permanently mounted on a fire truck. In addition the device may be used to feed 1 percent wetting agent solution to lines. List prices for hydraulic bronze, chrome-plated unit, complete with couplings and suction hose are: 1-in. hose size, $140; 1½-in. hose size, $160; 2½-in. hose size, $215.

★ ★ ★

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When you write to advertisers, please mention FIREMEN

New Texts

Fire Gas Exposure

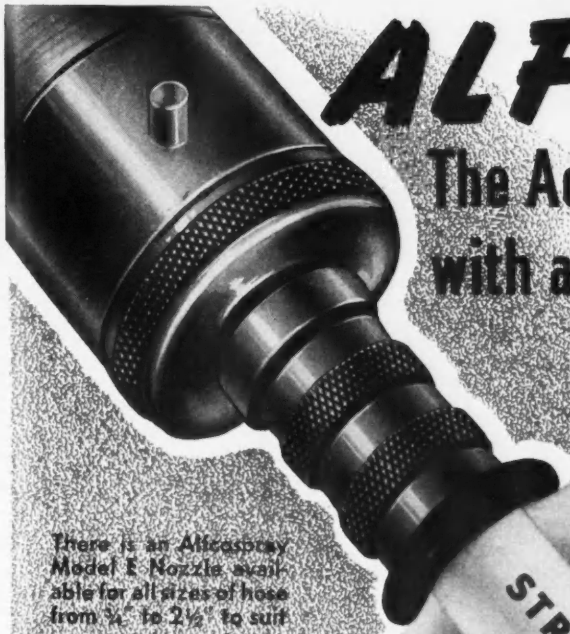
OF great importance to firemen is one of the latest publications of the National Fire Protection Association. This is a paper presented at the annual meeting by Dr. M. Geneva Gray of the Arthur D. Little, Inc. entitled "Physiological Considerations Relating to Fire Gas Exposure." This has been reprinted in pamphlet form and is available from the National Fire Protection Association Executive Office, 60 Batterymarch St., Boston 10, Mass. Price per single copy is 15c each; $12.50 per hundred.

The Fourth Arm

IN England, during the war, the idea was advanced that there were four defense arms: army, navy, air forces and fire services. A professional writer in the British wartime fire service, 1938–1945, has written for the general reader, a book which illustrates the work, the importance and dignity of the fire fighting services everywhere. *The Fourth Arm*, by James W. Kenyon, 272 pages, illustrated, published by George G. Harrup & Co., Ltd., 182 High Hilborn, London, W.C. 1, England. Cloth bound. Price: 13 shillings.

ALFCOSPRAY

The Adjustable Nozzle with a Real *WALLOP*



There is an Alfcospray Model E Nozzle available for all sizes of hose from ¾" to 2½" to suit your requirements.

FULL CURTAIN

VARIATIONS OF SPRAY

STRAIGHT STREAM

The Alfcospray Nozzle gives speedy protection. Rapid fire extinguishment is essential. With Alfcospray in operation fire quickly dies down making it easier to approach and finish the job.

The Alfcospray may be operated from straight stream to full curtain. In a straight stream it is as effective as a standard straight bore nozzle of equal capacity. In full curtain it offers full protection from heat and flame. It knocks down heavy smoke, dissipates fumes. Now is the time to buy, before the fire occurs.

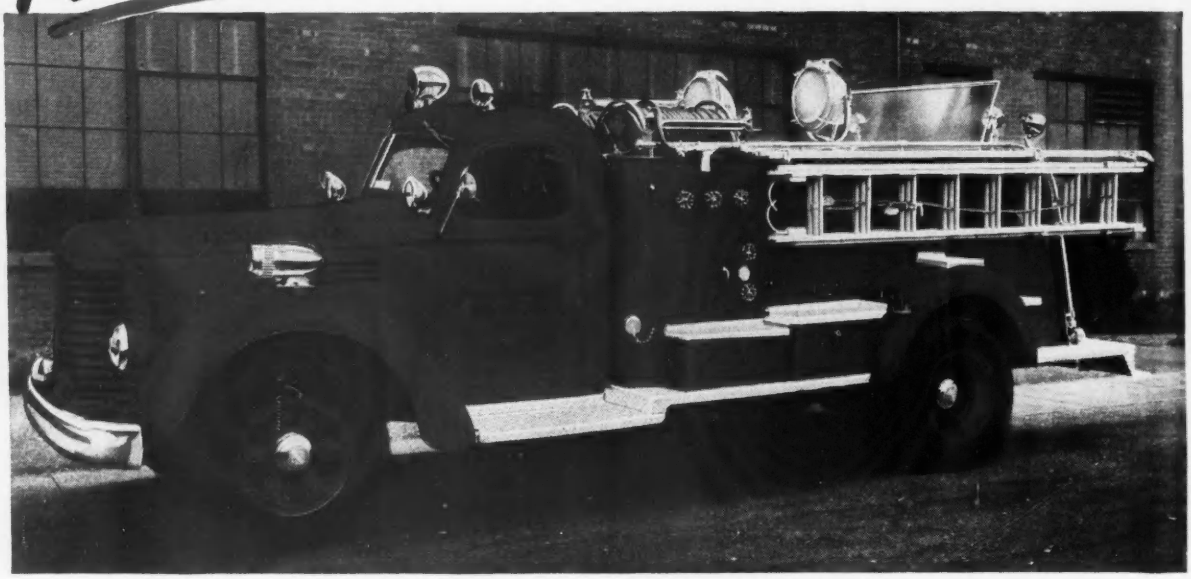
OUR SECOND CENTURY OF LEADERSHIP IN FIRE PROTECTION

AMERICAN LAFRANCE FOAMITE Corporation

ELMIRA · NEW YORK · U·S·A

ALFCO

PERFORMANCE that can't be imitated



THIS JOHN BEAN High-Pressure Fog Fire Fighter, mounted on an International Truck chassis, was recently delivered to Monongahela Valley Fire Department, Monongahela, Pa.

John Bean Fire Fighters carry their own water supply—provide two guns of 30 gallons each—850 pounds pump pressure. Delivered complete with all accessories.

YOU ARE ALWAYS SURE WITH A

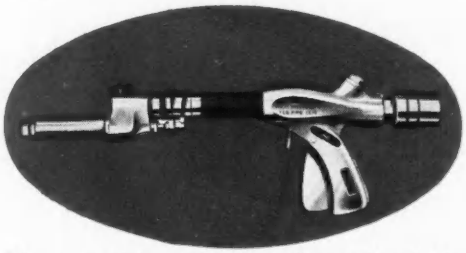
John BEAN HIGH-PRESSURE FOG FIRE FIGHTER

"Just as good as John Bean." — How often you've heard salesmen make that claim for other makes of high-pressure fog equipment!

All too often, however, fire departments purchasing such equipment have been fooled. John Bean performance can't be imitated with makeshift high-pressure units.

Be sure of constant high pressure, adequate engine power to maintain continuous and lasting fog flow. Specify a John Bean High-Pressure Fog Fire Fighter when you want *genuine* high-pressure fog.

We shall be pleased to furnish additional information on request.



The patented Bean Fog Gun. Operated at high water pressure, it gives every type of fog pattern for fire fighting. One man can operate it easily.

BEAN Original HIGH-PRESSURE FOG FIRE FIGHTER

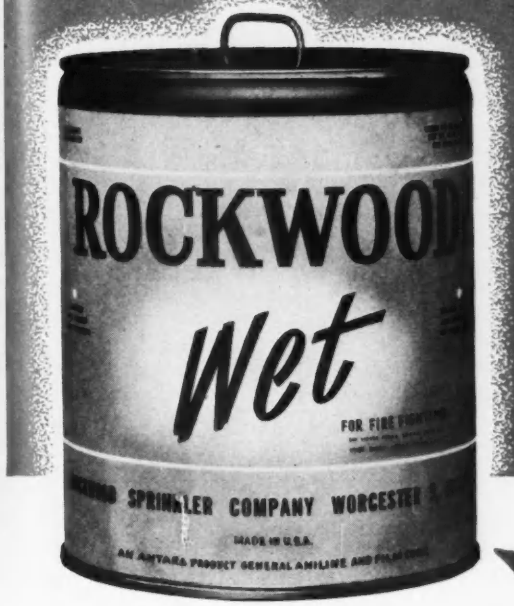
CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO., DEPT. 126, LANSING 4, MICH. • BEAN-CUTLER DIVISION, 409 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 60 YEARS

ROCKWOOD *presents*



A NEW WETTING LIQUID and NEW EQUIPMENT FOR AUTOMATICALLY FEEDING IT INTO FIRE HOSE LINES

Two newsworthy Rockwood developments are now being presented *hand-in-hand* to the fire departments of the country.

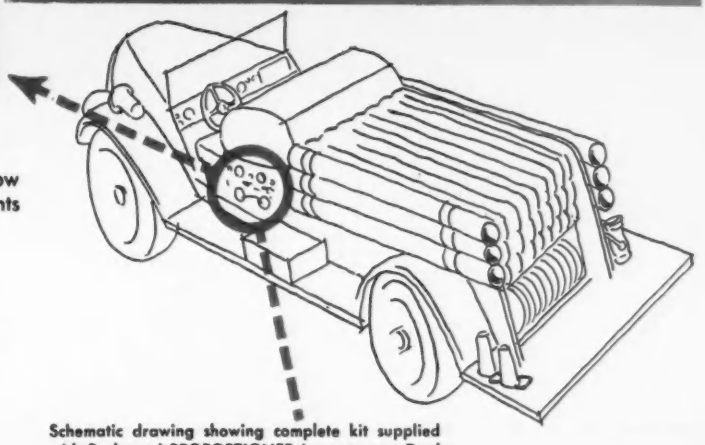
1. Rockwood WET — a new wetting liquid prepared specially for fire fighting. It will increase the fire extinguishing action of water thus making a little water go a long way.

2. Rockwood Automatic equipment for feeding Rockwood WET into your fire hose lines on your fire trucks. This is known as the Rockwood PROPORTIONER (across pump Dual A model). This new PROPORTIONER can also be used to automatically feed Rockwood mechanical foam liquid to your hose lines similar to the method used in proportioning the wetting liquid.

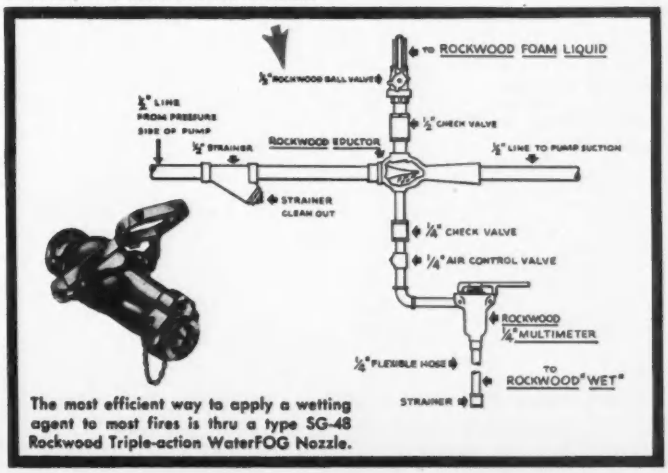
This combination of Rockwood WET and our new Automatic dual PROPORTIONER will help improve the fire fighting efficiency of your fire department. It will retain its remarkable penetrating action even at fire temperatures.

The new Rockwood PROPORTIONER handles wetting liquids efficiently and quickly.

Write for complete descriptive literature and prices.



Schematic drawing showing complete kit supplied with Rockwood PROPORTIONER (across pump Dual A model) with Rockwood MULTIMETER.



The most efficient way to apply a wetting agent to most fires is thru a type SG-48 Rockwood Triple-action WaterFOG Nozzle.

ROCKWOOD

ROCKWOOD SPRINKLER COMPANY

88 HARLOW STREET WORCESTER 5, MASSACHUSETTS

Specialists in Fire Protection Engineering, Equipment and Installation since 1907

SERVICE • SERVICE

SOLD . . . on Mack SERVICE

Mack Type 85, 750-gallon, triple combination pumper serving Cos Cob, Conn. Station of Greenwich Fire Department

• Firefighters and officials from coast to coast are sold on the service they get from their Macks . . . and sold on the service the Mack organization provides.

The serviceability of Mack apparatus is partly the product of the advanced thinking and planning that maintains Mack leadership. Equally important is the experience and skill that goes into their making. When you put Macks into service, you benefit from the greatest manufacturing and engineering facilities in the field.

In addition, every investment in Mack fire apparatus is protected by the nation-wide network of 67 Mack factory branches and over 600 dealers. With the largest and widest coverage in the industry, these Mack facilities provide a ready source of skilled service and a quick and constantly maintained supply of replacement parts.

As in more than 1,000 other communities, you'll find that you will also be sold on Mack serviceability and service when you *Modernize with Macks.*

Factory branches for service and parts in all principal cities. In Canada, Mack Trucks of Canada, Ltd.

Mack

FIRE APPARATUS

MACK MANUFACTURING CORP.

Fire Apparatus Division

Long Island City 1, New York

TRIPLE COMBINATION PUMPERS — 500 TO 1500 GALLONS . . . SQUAD WAGONS . . . CITY SERVICE AND QUADRUPLE COMBINATION LADDER TRUCKS

SERVICE • SERVICE

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